

FIG. 4 shows the relation between the master pressure controlled by the fluid pressure control device contained in the above brake device, and the assistance power (the target pressure difference).

FIG. 5 is a flow chart which shows the multi-mode failure detection routine that is stored in the ROM of the above fluid pressure control device.

FIG. 6 is a figure which shows the relations between the brake operating power and the master pressure in the above brake device.

FIG. 7 is a flow chart which shows the failure related brake pressure control routine that is stored in the ROM of the above fluid pressure control device.

FIG. 8 is a flow chart which shows the normal brake pressure control routine stored in the ROM of the above fluid pressure control device.

FIG. 9 shows the relation between the operation power and the master pressure of the brake pedal in the above brake device.

FIG. 10 shows the operation power and the condition of the change in the master pressure when large amount of fluid leakage failure is detected in the above brake device, respectively.

FIG. 11 shows the operation power and the condition of the change in the master pressure when a small amount fluid leak failure is detected in the above brake device, respectively.

FIG. 12 shows the operation power and the stroke, the booster pressure and the condition of the change in each fluid pressure of two pressure chambers of the master cylinder when the bottoming condition occurred in the above brake device, respectively.

FIG. 13 shows the master pressure and the changing condition of the operation power in the above brake device when the servo function failure occurred during the brake operation.

C1
FIG. 14 is a flow chart which shows the multi-mode failure detection routine that is stored in the ROM of the fluid pressure control device contained in the brake device in another embodiment of this invention.

C2
[0010] A brake pedal 10, which functions as a brake operating member, is connected to a master cylinder 14 through a vacuum booster (hereafter abbreviated to "booster") 12 in FIG. 1. The master cylinder 14 is of the tandem type, in which two pressure pistons engaged with each other in series can slide, and two pressure chambers are formed by each other independently in the housing in the front of each pressure piston. The master cylinder 14 generates an equal fluid pressure in each of the pressure chambers mechanically, corresponding to the brake operating power which is the pedal power of the brake pedal 10.

~~The brake device in this embodiment is a two-system-type brake.~~

C3
[0045] In this embodiment, the first predetermined operation power F_0 is decided based on, for example, the set load of the return spring which is contained in the booster 12 and the master cylinder 14, etc. When the brake device is in the normal condition, the first predetermined fluid pressure P_{th1} is made a smaller value than the master pressure at the time that the operation power is the first predetermined operation power F_0 . The normal condition includes the case that a small amount of fluid leakage is occurring.

C4
[0046] When the booster 12 is in the normal condition, the brake operating power and the assistance power of the booster 12 are added to the output member 11 in the booster 12, and the output of the output member 11 is added to the pressure piston 14b in the master cylinder 14. In the booster 12, if the brake operating power added to the input member 13 through the brake pedal 10 becomes larger than the power based on the set load of the return spring of the input member 13, the input member is moved against the power of the return spring, the control valve is placed in the operating condition, and the power piston generates the assistance power. In the master cylinder 14, if the output power added to the pressure piston becomes bigger than the power based on the set load of the return spring of the master